101/4

Excerpt from "Aspects of Planning for Natural Disasters... including preliminary proposals for the establishment of a Mobile Disaster Information and Communications Unit"

Alan J. Taylor

January 1971

101/4

Excerpt from "Aspects of Planning for Natural Disasters... including preliminary proposals for the establishment of a Mobile Disaster Information and Communications Unit"

Alan J. Taylor

January 1971

2. Intelligence

What are the problems which face voluntary agencies who wish to help after a disaster? They would appear to fall into two main categories: getting to know what has happened, and deciding what can be done about it. Finding out what has happened can prove to be difficult for a number of reasons. Floods, cyclones, hurricanes and earthquakes can affect a very large area in a very short time. Delineating the extent of the area stricken and the degree to which different groups of people within that area are affected, must be the immediate priority of any would-be helper. Communications in the area, probably unreliable at the best of times, are usually disrupted beyond use. Getting into an area to find out what has happened may not be so easy either. Floods demand boats and/or air transport where there was none before; earthquakes often occur in mountainous regions where roads are easily disrupted and in terrain where flying can be exceedingly dangerous. Even when one manages to gather some information, the problem arises of knowing (1) how reliable it is, for exaggeration and rumour are inevitably endemic at such times, and (2) how representative the information is. Information coming out of an area from untrained observers may be qualitatively descriptive -- painting the picture as it is (or at least as it was when the observer saw it) but it is unlikely to be quantitatively descriptive or accurate. Further, unless the observer is familiar with normality in the area, then he is liable to assume that what to him is unusual, is in fact the result of the disaster.

3. Field Communications

The needs in such a situation then, are:

(1) Rapid means of access to the disaster area.

(2) A sufficient number of observers who (a) are familiar with the area; (b) speak the language, and (c) know what they are looking for.

(3) A rapid means of communicating such information back to a central information centre before it becomes outdated and useless.

(4) A means of standardising such reports such that they are capable of comparison.

(5) A means of assembling such reports such that (a) a graphic picture of the total situation may be produced, and (b) the situation in any one locality can be immediately known.

In the recent large scale disasters, the representatives of most aid giving agencies have had to undertake such fact-finding work themselves. Each representative has arrived and organised as best he could, his own tour of the affected area, or rather, those parts of it which the availability of transport allowed and which he hoped no-one else had covered. The representatives have, in an informal way, exchanged such information as they were able to gather, but as no one body has been centrally responsible for collecting and distributing information, then the impressions collected by individual organisations have been at best, partial and arbitrary, and at worst misleading.

4. International Communications

The next problem faced by such representatives has been that of communicating their reports and recommendations back to their parent organisations. At a time when the world's eyes are focussed on the unfortunate country, the normal channels of communication, none too good at the best of times, are usually overloaded -- carrying press communiques and private messages enquiring after and giving news of relatives. It may take two days for a cable to reach Geneva from the field and a further two days for a reply to be sent back. Four days delay with an affected population of several hundred thousand waiting for aid is, by modern technical standards, to say the least, unnecessary. There is evidently a need for the provision of a reliable and expertly manned communications unit which could be rapidly installed in the principal town of the affected area or in the administrative capital of the country, as convenient.

9. A Disaster Services Group

After briefly ranging over a confusing variety of social, organisational and technical problems, I would like to conclude with a fairly limited suggestion for the establishment of a mobile disaster information unit. Bearing in mind the likely complexities of organising any disaster service on an international basis and the fairly limited resources available to voluntary agencies, then any plan for co-ordination must, at least in the initial stages, be simple, inexpensive

and answer a felt need. In my experience the principal practical problem to be faced by the international voluntary agencies after a natural disaster is the one described in the early paragraphs of this paper: that of obtaining reliable information and co-ordinating activities (a) with each other, and (b) with the indigenous government.

For a fairly modest investment in staff and equipment, it should be possible to establish a small disaster services group (of say not more than twelve persons) who would be available to travel to any part of the world at a moment's notice and who would provide the communications centre around which international, governmental and voluntary agencies could, with reliable and immediate information, plan their activities. Such a system would have the additional advantage that all agencies would need to report their observations and activities to the centre in order to stay in the picture themselves. Without in any way imposing a system on other organisations or on the resident government authorities, such a communications and information centre would automatically become a co-ordinating unit, in practice, if not in name. For a more detailed account of the equipment needed to provide such a service, refer to Appendix I and II.

Technical Appendix I

Outline of Equipment Necessary for the Establishment of Radio Contact Between Survey and Aid Personnel in the Field and the Local Capital:

For such a purpose, equipment would have to be capable of transmitting and receiving over distances in the order of two to several hundred miles. All equipment should be to military specification, that is: of sound construction, suitable for use in all geographical and climatic conditions (including tropical conditions with high temperature and humidity); be waterproof and resistant to vibration and shock; be simple in operation; be powered by rechargeable batteries and be capable of being carried as a manpack unit or fitted to a vehicle or boat as necessary. The unit should also be capable of being set up and operated by a comparatively unskilled operator.

A set suitable for the work envisaged would have the following features. It should be a single side bank transmitter-receiver for telephony, completely transistorised, cover 2 MHz to 12 MHz in 1kHz steps by frequency synthesis giving 9,999 channel frequencies. It should be operated from a rechargeable 12V battery to give a 15W p.e.p. output through a whip or dipole aerial, and be capable of use in conjunction with a 100W p.e.p. linear amplifier.

It is probably impossible to be precise about the number of sets which would be required to provide a flexible communications network under all conditions and in all terrains where natural disasters are liable to occur. In some senses the more sets available the better. To enable a rapid initial survey of affected areas to be made, and to communicate such information back to a central office would, in the most recent of disasters, probably have necessitated the use of some twelve sets. However, without doubt, the principal limitation would be the cost of such apparatus. A complete unit (including 100 Watt amplifier) costs in the region of two thousand eight hundred pounds sterling (£2,800 - approx. U.S.$6,800). Such apparatus is likely to be beyond the means of individual voluntary aid giving agencies. A consortium of agencies however, might be prepared to consider investing the necessary resources.

Technical Appendix II

Outline of Equipment Necessary for the Establishment of Radio Teleprinter Link Between the Local Capital of the Affected Country and Geneva or New York

It is to be stressed from the outset that such equipment will certainly be beyond the means of the voluntary aid giving agencies, as the equipment described is valued in the order of ten thousand pounds sterling (≠10,000, approx. U.S. $24,300) and a lesser sum for the unit located in Geneva or New York. Such information is included only in the hope that the voluntary agencies might be better in a position to pressure the appropriate bodies to earmark for disaster situations such equipment and skilled operators as already exist for military purposes. An alternative approach might be to attempt to interest the international press in a jointly sponsored communications venture. There are common problems to be faced by both international voluntary aid agencies and the world's media services. The latter might be more easily persuaded of the advantages in investing the necessary funds.

A mobile transmitting-receiving station for the field capital would consist of the following components. A high power transmitter of 1 K Watt, comprising a synthesised and tunable receiver, a synthesised 1 K Watt drive unit, a 1 K Watt amplifier and a directional aerial. In addition, a teleprinter would be coupled to the simple transmitting-receiving unit and the whole would be housed in a mobile cabin which could be loaded complete and transported by air to its destination at a moment's notice. The cabin would be air-conditioned by its own A.C. unit and two generating sets (one operational and one standby) would also be required to power the unit.

With modifications, such a unit could be geared to maintaining communications links with Geneva or New York, or any part of the world, whilst simultaneously monitoring radio reports from the field. Such a unit would become the centre of the communicational aspects of the operation, and could easily be linked either physically or by land line to centre of administrative operations.